What is claimed is:

1. A non-aqueous electrolyte secondary battery provided with a positive electrode, a negative electrode, a separator interposed between the positive electrode and the negative electrode, and a non-aqueous electrolyte, wherein

positive electrode active material in said positive electrode is a mixture of lithium-manganese composite oxide having spinel structure represented by a general formula $Li_{1+z}Mn_2O_4$ (wherein a relationship $0 \leq z \leq 0.2$ is satisfied) and lithium-transition metal composite oxide represented by the general formula $LiNi_{1-x-y}Co_xMn_yO_2$ (wherein the relationships $0.5 < x+y < 1.0$ and $0.1 < y < 0.6$ are satisfied), and

negative electrode active material in said negative electrode is graphite coated with low crystalline carbon where whole or a part of a surface of first graphite material as a substrate is coated with second carbon material which is lower in crystallinity compared with the first graphite material.

2. The non-aqueous electrolyte secondary battery according to claim 1, wherein

said negative electrode active material has an intensity ratio (IA/IB) which is an intensity (IA) of 1350/cm based on an intensity IB of 1580/cm, as measured by argon laser Raman, in a range of 0.2 to 0.3

3. The non-aqueous electrolyte secondary battery according to claim 1, wherein

the separator is interposed between said positive electrode and said negative electrode, and these are wound.

4. A non-aqueous electrolyte secondary battery provided with a positive electrode in which a layer containing positive electrode active material is formed on a positive electrode current collector, a negative electrode, a separator interposed between the positive electrode and the negative electrode, and a non-aqueous electrolyte, wherein

said positive electrode active material is a mixture of lithium-manganese composite oxide having spinel structure represented by a general formula $Li_{1+z}Mn_2O_4$ (wherein a relationship $0 \le z \le 0.2$ is satisfied) and lithium-transition metal composite oxide represented by a general formula $LiNi_{1-x-y}Co_xMn_yO_2$ (wherein relationships $0.5<x+y<1.0$ and $0.1<y<0.6$ are satisfied), and

a ratio (b/a) which is thickness (b) of said separator based on the thickness (a) of the layer containing said positive electrode active material is in a range of 0.15 to 0.9.

5. The non-aqueous electrolyte secondary battery according to claim 4, wherein

negative electrode active material in said negative electrode is carbon material.

6. The non-aqueous electrolyte secondary battery according to claim 5, wherein

said carbon material as the negative electrode active material is graphite coated with low crystalline carbon where whole or a part of a surface of first graphite material as a substrate is coated with second carbon material which is lower in crystallinity compared with the first graphite material.

7. The non-aqueous electrolyte secondary battery according to claim 4, wherein

the separator is interposed between said positive electrode and said negative electrode, and these are wound.

8. A non-aqueous electrolyte secondary battery provided with a positive electrode in which a layer containing positive electrode active material and binding agent is formed on a positive electrode current collector, a negative electrode, a separator interposed between the positive electrode and the negative electrode, and a non-aqueous electrolyte, wherein

said positive electrode active material is a mixture of lithium-manganese composite oxide having spinel structure represented by a general formula $Li_{1+z}Mn_2O_4$ (wherein a relationship $0 \le z \le 0.2$ is satisfied) and lithium-transition metal composite oxide represented by a general formula $LiNi_{1-x-y}Co_xMn_yO_2$ (wherein the relationships $0.5<x+y<1.0$ and $0.1<y<0.6$ are satisfied);

said binding agent is polyvinylidene fluoride; and

proportion of the binding agent based on said positive electrode active material is in a range of 2 to 10 wt%.

9. The non-aqueous electrolyte secondary battery

according to claim 8, wherein

negative electrode active material in said negative electrode is carbon material.

10. The non-aqueous electrolyte secondary battery according to claim 9, wherein

the carbon material as said negative electrode active material is graphite coated with low crystalline carbon where whole or a part of a surface of first graphite material as a substrate is coated with second carbon material which is lower in crystallinity compared with the first graphite material.

11. The non-aqueous electrolyte secondary battery according to claim 8, wherein

the separator is interposed between said positive electrode and said negative electrode, and these are wound.